

and Discords with these, as there may be with *musical strings*. Having therefore seen what is the cause of Congruity or Incongruity, those relative properties of fluids, we may, from what has been said, very easily collect, what is the *reason* of those Relative proprieties also between *fluid bodies* and *solid*; for since all bodies consist of *particles* of such a *Substance*, *Figure*, and *Bulk*; but in some they are *united* together more *firmly* then to be *loosened* from each other by every *vibrative* motion (though I imagine that there is no body in the world, but that some degree of agitation may, as I hinted before, agitate and loosen the particles so as to make them fluid) those *cohering* particles may *vibrate* in the same manner almost as those that are *loose* and become *unisons* or *discords*, as I may so speak, to them. Now that the *parts* of all *bodies*, though never so *solid*, do yet *vibrate*, I think we need go no further for proof, then that *all* bodies have some *degrees* of *heat* in them, and that there has not been yet found any thing *perfectly cold*: Nor can I believe indeed that there is any such thing in Nature, as a body whose particles are at *rest*, or *lazy* and *inactive* in the great *Theatre* of the *World*, it being quite *contrary* to the grand *Oeconomy* of the Universe. We see therefore what is the reason of the *sympathy* or uniting of some bodies together, and of the *antipathy* or flight of others from each other: For *Congruity* seems nothing else but a *Sympathy*, and *Incongruity* an *Antipathy* of bodies; hence *similar* bodies once *united* will not *easily part*, and *dissimilar* bodies once *disjoyn'd* will not *easily unite* again; from hence may be very easily deduc'd the reason of the *suspension* of *water* and *Quick-silver* above their usual *station*, as I shall more at large anon shew.

These properties therefore (always the concomitants of fluid bodies) produce these following visible *Effects*:

First, They *unite* the parts of a fluid to its *similar Solid*, or keep them *separate* from its *dissimilar*. Hence *Quick-silver* will (as we noted before) *stick* to *Gold*, *Silver*, *Tin*, *Lead*, &c. and *unite* with them: but *roul* off from *Wood*, *Stone*, *Glass*, &c. if never so little scituated out of its *horizontal level*; and *water* that will *wet salt* and *dissolve* it, will *slip* off from *Tallow*, or the like, without at all *adhering*; as it may likewise be observed to do upon a *dusty* superficies. And next they cause the parts of *homogeneousal* fluid bodies readily to *adhere* together and *mix*, and of *heterogeneousal*, to be exceeding *averse* thereunto. Hence we find, that *two small drops* of *water*, on any superficies they can *roul* on, will, if they chance to touch each other, *readily unite* and *mix* into one 3<sup>d</sup> *drop*: The like may be observed with *two small Bowls* of *Quick-silver* upon a *Table* or *Glass*, provided their surfaces be not *dusty*; and with *two drops* of *Oyl* upon fair *water*, &c. And further, *water* put unto *wine*, *salt water*, *vinegar*, *spirit* of *wine*, or the like, does immediately (especially if they be shaken together) *disperse* it self all over them. Hence, on the contrary, we also find, that *Oyl* of *Tartar* poured upon *Quick-silver*, and *Spirit* of *Wine* on that *Oyl*, and *Oyl* of *Turpentine* on that *Spirit*, and *Air* upon that *Oyl*, though they be stopt closely up into a *Bottle*, and *shaken* never so much, they will by no means long suffer any of their bigger parts to be *united* or included

cluded within any of the other Liquors (by which reason plainly enough represented the four *Peripatetical Elements*, the *subtil Æther* above all.) From this property 'tis, that *water* not mingle with, or vanish into *Air*, but is *driven* (by the *protruding* it on every side) and forc'd into as little a space as it can possibly be contained in, namely, into a *Round Globule*. The *Air* blown under the *water*, is *united* or thrust into the *ambient water*. And a parcel of *Quick-silver* enclosed in any other *Liquor*, is *formed* into a *round* *Balloon*.

Now the cause why all these included Fluids, new or old, many others as are wholly included within a heterogeneous Solid, are not exactly of a *Spherical Figure* (seeing that if caused only, it could be of no other) must proceed from the *pressure* against the two opposite flatted sides. This *dental pressure* may proceed from *divers causes*, and *alter* the *Figure* of the included heterogeneous fluid body may be included either with a fluid only, or partly with a fluid, and partly with a solid, or partly with another; there will be found a very great variety of *surfaces*, much differing from a *Spherical*, and a great resistance or pressure that belongs to each of the sides.

Which Properties may in general be deduced from *Motion*, and *Rest*. For, either this Globular Figure is of *regular Motion*, such as is *Gravity*; or a *violent*, such as is *the Motion* of the fluids, as we see in the *wind* ruffling up the waves of *Streams*, and *foaming* of *Cataracts*, and the like. Or, it is of *Rest*, *Firmness* and *Stability* of the ambient *Solid*. If the *Solid* be of an *angular* or any other *irregular Form*, the fluid will be near of the *like*, as a *Pint-Pot* full of *water*, or a *Bladder* next, if the including or included fluid have a great resistance against another, then will the *globular Form* be deprest into a *flatted* one. As if, for example, we suppose the Circle *A B C D*, to represent a *drop* of *water*, *Quick-silver*, or the like, included in the *Air* or the like, which supposing there were no greater gravity in the fluids, or that the contained and containing were equally compressed into an exactly *spherical* fluid forcing equally against every side of it. But if there be greater gravity in the included, by reason whereof it is prest from *A* towards *B*, and thereby the whole pushed that motion being hindered by the resistance of the surrounding ambient, the globular Figure *A D B C* will be deprest into a *flatted* one, *E G F H*. For the side *A* is detruded to *E* by the resistance of the adjacent medium; and *B* to *F* by the resistance of the subjacent medium; and *C* necessarily be thrust to *G*; and *D* to *H*. Or else, supposing the fluid to be of the same gravity in the ambient, by whose more then ordinary pressure the side of the included globule; *B* will be forced to *F*, and *C* to *H*, and *A* to *E*, and *D* to *G*.